CLAIMS

1. A Fabry-Perot type semiconductor laser device having a layer structure including an active layer of a quantum well structure, and emitting a laser beam having wavelength stabilized by an action of return light and having a multimode spectrum, wherein each well layer satisfies relation:

$$\Gamma/d \leq 1.3\times10^{-3}nm^{-1}$$

where Γ and d(nm) are an optical confinement factor and a thickness of a well layer, respectively.

2. The semiconductor laser device according to claim 1, wherein said return light is return light from an optical feedback mechanism.

3. The semiconductor laser device according to claim 2, wherein said optical feedback mechanism is a Fiber Bragg Grating.

4. The semiconductor laser device according to claim 1, wherein the thickness of each well layer in said active layer is 8.5nm or larger.

5. The semiconductor laser device according to claim 1, wherein difference between energy level of a conduction band of each barrier layer in said active layer and energy level of a conduction band of each well layer in said active layer is 170meV or smaller.

6. The semiconductor laser device according to claim 4, wherein a major part of injected carriers are optimized within a profile region of an emitted laser beam.

7. The semiconductor laser device according to claim 5, wherein a major part of injected carriers are optimized within a profile region of an emitted laser beam.

8. The semiconductor laser device according to claim 6, wherein said optimization is done by selecting a stripe width of a current blocking layer.

9. The semiconductor laser device according to claim 7, wherein said optimization is done by selecting a stripe width of a current blocking layer.

10. The semiconductor laser device according to claim 6, wherein optical confinement layers are formed in the state of interposing said active layer, and carrier blocking layers are each provided between said active layer and one of said optical confinement layers, said carrier blocking layers having bandgap energy larger than bandgap energy of said active layer and bandgap energy of said optical confinement layers.

11. The semiconductor laser device according to claim 7, wherein optical confinement layers are formed in the state of interposing said active layer, and carrier blocking layers are each provided between said active layer and one of said optical confinement layers, said carrier blocking layers having bandgap energy larger than bandgap energy of said active layer and bandgap energy of said optical confinement layers.

12. A laser module wherein an optical fiber is optically coupled to an emission end face of a semiconductor laser device according to Claim 1.

13. A laser module wherein an optical fiber is optically coupled to an emission end face of a semiconductor laser device according to Claim 2.

14. A laser module wherein an optical fiber is optically coupled to an emission end face of a semiconductor laser device according to Claim 3.

15. A laser module wherein an optical fiber is optically coupled to an emission end face of a semiconductor laser device according to Claim 4.

16. A laser module wherein an optical fiber is optically coupled to an emission end face of a semiconductor laser device according to Claim 5.

17. A laser module wherein an optical fiber is optically coupled to an emission end face of a semiconductor laser device according to Claim 6.

18. A laser module wherein an optical fiber is optically coupled to an emission end face of a semiconductor laser device according

to Claim 7.

19. A laser module wherein an optical fiber is optically coupled to an emission end face of a semiconductor laser device according to Claim 8.

20. A laser module wherein an optical fiber is optically coupled to an emission end face of a semiconductor laser device according to Claim 9.

21. A laser module wherein an optical fiber is optically coupled to an emission end face of a semiconductor laser device according to Claim 10.

22. A laser module wherein an optical fiber is optically coupled to an emission end face of a semiconductor laser device according to Claim 11.